

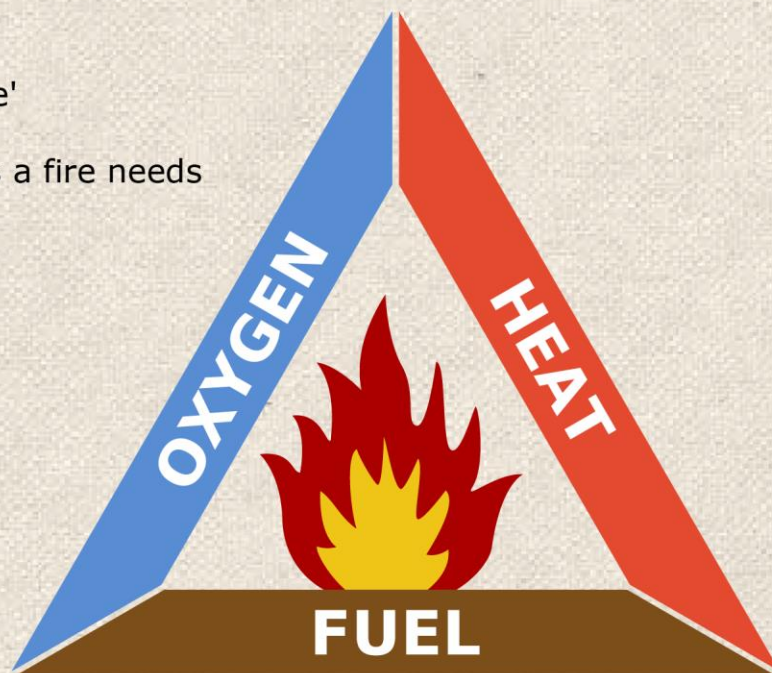


TRIANGLE OF COMBUSTION

This is also known as the 'Fire Triangle'

The triangle shows the three elements a fire needs to ignite:

- heat,
- fuel,
- and an oxidizing agent (usually oxygen).



A fire naturally occurs when all elements are present and combined in the right mixture.

Extinguishing a fire

To stop a combustion reaction, one of the three elements of the fire-triangle has to be removed.

Without heat, a fire cannot begin, and it cannot continue. Heat is removed by the application of water, which absorbs heat for phase change from water to steam. Scraping embers from a burning structure also removes the heat source. Turning off the electricity in an electrical fire removes the ignition source.

Without fuel, a fire will stop or a fire can be prevented. Fuel can be removed naturally, as where the fire has consumed all the burnable fuel, or by mechanically removing the fuel from the fire. Fuel separation is an important in fighting bush fires, as in the use of fire breaks. The fire stops because less fuel leads to a decrease in energy release and a lower temperature. So removing the fuel decreases the heat of the fire.

Without oxygen, the combustion process slows. Oxygen can be denied to a fire using a carbon dioxide fire extinguisher, a fire blanket or water. Firefighters can use foam to remove the oxygen (suffocating the fire).